NASA Briefs

White House approves Cassini Saturn launch

NASA received formal approval from the White House Office of Science and Technology Policy on Oct. 3 to proceed toward the Oct. 13 launch of the robotic Cassini mission to explore Saturn and its moon Titan. NASA Administrator Dan Goldin said, "I am confident in the safety of the Cassini mission, and I fully expect that it will return spectacular images and scientific data about Saturn, in the same safe and successful manner as the Voyager, Galileo and Ulysses missions." White House launch approval is required by presidential directive due to the Radioisotope Thermoelectric Generators used to provide electrical power for the Cassini spacecraft and its scientific instruments, and the radioiostope heater units that it carries to keep the spacecraft's instruments and electronics warm in deep space.

Antarctic radar survey images arrive

Initial images from the first complete radar survey of Antarctica, using the Canadian Space Agency's Radarsat mission, show better-than-expected details of its massive ice streams and crevices, as well as old, buried features of the international South Pole research station established in the late 1950s. "The quality of these first images is quite stunning," said Dr. Robert Thomas, program manager for polar research in NASA's Office of Mission to Planet Earth. "Antarctica is the only continent on Earth that has not been properly mapped. Despite many years of research, we still do not know whether this massive ice sheet is growing larger or smaller. Radarsat's Antarctic Mapping Mission should help us answer this question." Images and further information are available on the Internet at: http://radarsat.space.gc.ca.

Correction

Updated information is now available about the upcoming JSC On-Site Blood Drive highlighted on Page 2. Donations will be accepted from 7:30 a.m.-3:30 p.m. Oct. 15 , and from 8 a.m.-3:30 p.m. Oct. 16 in the Teague Auditorium lobby. The collection of blood takes seven to 10 minutes, with the whole process usually taking about 45 minutes. For details, call Dan Mangieri at x33003, or Amy Mendez at x32604. To donate plasma or platelets, call Donna Stuart at x33032. No appointment is necessary for whole blood donations.

Fly-around reveals possible Spektr leak area

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Russian counterparts to deliver a replacement motion control computer and a record amount of supplies and other equipment, retrieve the Mir Environmental Effects Payloads during the first ever multinational shuttle-based space walk and tried to spot the leak in Mir's Spektr module.

Atlantis blasted off on time from the Kennedy Space Center Sept. at 9:34 p.m. CDT Sept. 25, just hours after NASA Administrator Daniel S. Goldin gave final clearance to launch, lighting up the central Florida coastline.

Wetherbee guided *Atlantis* to a smooth docking with Mir at 2:58 p.m. CDT Sept. 28. Less than two hours after docking, Wetherbee and Solovyev opened their respective spacecraft's hatches and shook hands, Wetherbee handing Solovyev a new guidance system computer.

One day later, Wolf transferred his custom-made Soyuz seat liner to Mir, officially joining Solovyev and Vinogradov as a member of the Mir 24 crew and ending Foale's 134 days as a Mir crew member. Wolf quickly set up shop in Kvant-2, which he will use as sleeping quarters and laboratory.

Over the next few days, Foale acquainted Wolf with his new home while other members of the crew transferred nearly three tons of logistical supplies to Mir, and 1,717 pounds of water.*Atlantis* returned to Earth with nearly a ton of U.S. science items and 900 pounds of Russian samples.

On Oct. 1, Parazynski and Titov spent 5 hours and one minute in the shuttle's cargo bay and at the docking module, collecting four suitcase-sized Mir Environmental Effects Payloads. The experiment had been placed outside the Mir by another pair of shuttle space walkers a year and a half ago to collect data about how the space environment affects a space station.

Titov and Parazynski also affixed a Solar Array Cap to the docking module for possible use in sealing off a suspected breach in the hull of the Spektr module, damaged in a June 25 collision with a Progress resupply ship.

As Titov and Parazynski worked outside, Solovyev and Vinogradov installed a new motion control computer in the Mir's Core Module, replacing one that had experienced problems.

On Oct. 2, with their work concluded, Wetherbee and Solovyev shook hands for a final time at 5:45 p.m. and closed the hatches between the two spacecraft. The next day, *Atlantis* undocked one orbit later than originally planned, at 12:28 p.m. CDT. Russian flight controllers had requested the delay so cosmonauts could finish installing a new data relay unit in the Kvant-1 module.

As Bloomfield flew around the station, Solovyev opened a pressure valve, blowing air into the depressurized Spektr module. Titov aboard *Atlantis* and Vinogradov aboard Mir both reported seeing particles or debris seeping from the base of the damaged solar array on Spektr, the most likely location for a hull breach.

Halloween on Mars set for Oct. 23

By Wendy Hall

Get ready for an out-of-this-world experience as JSC's Employee Activities Association and Space Center Houston launch an array of Halloween activities for the entire family during "Halloween on Mars."

For NASA employees from 5:30-8:30 p.m Oct. 23, Space Center Houston will transform into a giant Halloween event that celebrates the discovery of pumpkins on Mars by Space Center Houston's wacky scientist I.B. Frazzled.

To kick-off the occasion, Space Center Houston has created six Martian-like settings where children will receive free candy, stickers, buttons and face painting. Two live shows have been especially designed for the event to entertain and educate children about Mars. In one of the shows, Professor I.B. Frazzled and MURPHY (Mars' Unique Resident who brings Pumpkins to Halloween Youngsters), will explain how pumpkins really can exist on Mars—with a little Halloween magic.

The whole family is invited, including civil servants, contractors, and friends at a cost of $4 per child (ages 3-11), $3 per adult (ages 12-99), and $2 for toddlers (ages 0-2). Tickets may be purchased at the Bldg. 11 Exchange Store through Oct. 22.

Photo courtesy Space Center Houston

MURPHY is seen in his pumpkin-shaped, intergalactic space vehicle getting final touches by Space Center Houston Exhibits Manager Pete Colangelo, center, as Space Center Houston Marketing Director Roger Bornstein, right, and set designer Beverly Smith watch the 4-foot-tall Martian come to life.

Costumes are encouraged, as pictures will be taken of costumed children (ages 0-11). Face painters and clowns will be available, the Employee Activities Association will serve punch and cookies, and hand out other goodies. More substantial food will be available at the Silver Moon Cafe at a reduced price. The gift shop will be open at a 10-percent discount. The IMAX film "Mission To Mir" will be shown at 6:30 p.m. and 7:45 p.m. For details, call 281/244-2100.

First station element still on schedule

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be completed at Khrunichev in November and it will be moved to Rocket Space Corp.-Energia facilities to begin final testing. Another general designer's review is scheduled for January, and the module will be shipped to Baikonur to begin launch preparations in May.

The first station element, the U.S.-funded, Russian-built Functional Cargo Block, is on track for a launch in June. Modifications to the module that will allow it to be refueled and to accommodate Soyuz dockings are finished. The FGB was completed at Khrunichev Sept. 15 and moved to the RSC-Energia facilities where it is undergoing final testing. In January, it will be shipped to Baikonur.

The first U.S.-built station element, Node 1, was shipped from its Alabama factory to Kennedy Space Center in June to begin preparations for launch on the first shuttle assembly mission, STS-88, set for July 1998. The second of two conical-shaped pressurized mating adapters that will be attached to either end of the node has been shipped from its California factory to Kennedy.

"With the Node and pressurized mating adapters now at Kennedy for launch processing and the FGB ahead of schedule for its shipment to Baikonur, it's a busy and exciting time as we prepare for the launch and assembly phase," Brinkley said.

During the next nine months leading to the start of the International Space Station's five-year, 45-flight orbital assembly sequence, the first truss structure, a third mating adapter and the first solar arrays, batteries and radiators for the station will be shipped from factories nationwide to Florida to be readied for launches in early 1999. Less than a year from now, in August 1998, the first station laboratory, the U.S. Laboratory Module, will be shipped from a Huntsville, Ala., factory to Kennedy to begin final testing and launch preparations.

Maps, catalogs detail safety activities

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A sampling of the booths or exhibits include Massage Therapy, Alzheimer's Association , American Red Cross, Bay Area Turning Point, Harris County Health Department, Lifegift, U.S. Divers Association, Greater Houston 911, U.S. Coast Guard Auxiliary, Hermann Life Flight Helicopter, Bay Area Equestrian Center, Texas-New Mexico Arc Demonstration, Galveston County Auto Crime Task Force and Cancer Awareness/M.D. Anderson Cancer Center.

A catalog will be provided at various locations around the center on the day of the event. Inside will be a site map that indicates the location of each booth. If the weather does not look promising on Oct. 15, many of the booths that would have been located outside around the pond will be moved inside to the lobbies of the surrounding buildings. Again, maps will be available to indicate the new locations of the booths if poor weather is encountered.

"This day will be exactly what the individual makes it," Neu said, "and if last year's participation was any indication, the 1997 Safety and Total Health Day should be an even more effective teaching and learning environment. In short, I think we can all look forward to a really great, and most enjoyable, event."

Chamber test continues work of three previous crews

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tions of those methods. The current test is using biological systems for the primary means of water recovery and a combination of mechanical and biological systems will be employed to revitalize the air.

A module containing wheat crops will be linked to the test chamber to provide up to 25 per cent of the crew's oxygen from the carbon dioxide produced by the crew in the 20-foot chamber. Water consumed by the crew will be recycled using a unique biological and physical/chemical water recovery system designed at JSC. Solid waste from the crew will be incinerated to produce additional carbon dioxide to sustain plant growth for air revitalization and food production.

The prime and backup crews also will conduct 14 demonstration projects during the test, including both physiological and psychological medical investigations and evaluations of food systems and of astronaut training techniques.

The team members are providing daily status reports on the operation of the life support systems, as well as crew habitability criteria. Kloeris plans to issue a weekly journal report every weekend.

"The Lunar Mars Life Support Test Project Phase III test is progressing very well so far," Kloeris said in her first journal report. "The air and water recycling systems seem to be doing great at this point. Our four member crew is doing well.

"I am the science coordinator for the mission and thus responsible for all the data that is collected during the test for the numerous experiments we are doing while we're 'in the can,'" she continued. "In addition to the daily living items, we are performing a number of activities to support some 14 different experiments that will be conducted over the 90 day test. Some of the activities this past week included taking a number of microbiological samples in the chamber including air, water and surface samples; doing some dietary surveys of our eating habits in the chamber; and we did a 48 hour sleep study which involved us wearing some gear over our shoulders for two days that monitored our core body temperature from a little "pill" that we swallowed.

"The pill contains a little transmitter which transmits our temperature to the unit we wear over our shoulder like a purse. The combination of the core body temperatures and saliva samples just about every hour on the hour during the day, gives the researchers valuable data about the melatonin levels in our body and how they relate to body temperature and sleep patterns. The research is to be used to hopefully be able to track astronaut sleep patterns as an indicator of their mental health and stress levels on long duration missions," Kloeris reported.

The current test continues investigations begun on tests conducted in August 1995, June-July 1996, and January-March 1997.

The four-person crew will spend more than 90 days investigating regenerative life support, a critical enabling technology for future human deep-space missions since astronauts can't carry the supplies to support a trip to Mars or a base on the Moon. The latest information is on-line at: http://pet.jsc.nasa.gov

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